

Monitoring and Investigating Certified Registered Nurse Practitioners in Pain Management

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The Mayday Scholars Program for 2001–2002 provided an opportunity to boards of nursing to present their experiences in monitoring the prescribing practices of advanced practice nurses and to research ways for improving their own investigation processes as professional disciplinary agencies for prescribing practices related to pain management.¹ The Alabama Board of Nursing was interested in participating in the program based on its commitment to accountability for public protection. A gradual increase in disciplinary cases involving violations of prescribing practices by certified registered nurse practitioners (CRNPs)² prompted our inquiry as to whether a proactive monitoring system was needed to determine compliance with regulations for advanced practice nurses in collaborative practice.

In this article, we discuss selected elements related to pain management and regulatory factors, including nursing, that affect the treatment of pain. We present a brief overview of the evolution of advanced practice nursing, with an emphasis on the nurse practitioners movement, and prescription practices and pain management by nurse practitioners. Next, we present research results about nurse practitioners approved for practice in Alabama, their perceptions of their preparation for prescriptive practice in pain management, and their experiences in collaborative practice related to prescriptive authority for pain management. Then, we share the experiences of the Alabama Board of Nursing in monitoring and investigating nurse practitioners for compliance with prescriptive authority. Finally, we show how evidence obtained from research can have rapid application to regulatory concerns, and conclude with an open agenda for future research related to pain management and regulation.

The survey presented in this article employed an evidence-based approach using an action research design to address the survey's priorities.³ Research questions centered on:

- barriers to pain management experienced by nurse practitioners;
- autonomy exercised by nurse practitioners in making decisions for dosage and administration of controlled substances when operating under a protocol for collaborative practice; and
- opportunities to improve the investigation process of a board of nursing when collaborative practice is required for prescribing practices related to pain management.

FACTORS IN PAIN MANAGEMENT

The nature of health care delivery is inextricably linked to conditions that demand intervention for pain relief. Unfortunately, pain is often undertreated in all systems of health care delivery. Numerous scholars have described the reasons for failure to effectively treat pain comprehensively. The reasons most frequently referenced in relation to physicians include lack of education, threats of litigation or discipline for accusations of overuse of opiates, lack of support from insurance companies, and fear of tolerance and addiction to opioids.⁴ While there is no evidence that large numbers of physicians are being sanctioned for their treatment practices in pain management,⁵ the mere threat of disciplinary action by regulatory agencies serves as a stimulus for undertreatment or conservative treatment of pain.⁶ Nurses have cited reasons similar to those given by physicians for inadequate treatment of pain, although with less emphasis on concerns related to overprescribing opiates.⁷ Organizational variables also contribute to inadequate treatment of pain. These include low

prioritization of pain management; lack of written standards, policies, or procedures for assessment and management of pain; lack of accountability for pain management; lack of criteria for pain management in quality assurance programs;⁸ and provider attitudes about the connection between pain and illness, summed up in the adage that pain is part of illness and should be “toughed out.”⁹

Economic factors such as limitations on third-party reimbursement practices have been implicated in matters of inadequate pain management. Most research in this arena has focused on institutional and physician reimbursement.¹⁰ Although the literature indicates that limitations on reimbursement by insurers affect access to care,¹¹ no research has clearly established that constraints on reimbursements to nonphysician health care professionals result in undertreatment of pain.

Statutory mandates at federal and state levels for the regulation of controlled substances play a significant role in pain management.¹² Securing a reasonable balance in allowing for effective interventions for pain, while enforcing laws designed to control illegal prescribing practices, continually challenges regulators. Monitoring for compliance is complicated by privacy concerns in the patient-provider relationship and laws regulating confidentiality.¹³

Nursing as a factor in pain management

Nursing is the largest health care labor market in the United States, with approximately 2.6 million registered nurses and approximately 700,000 licensed practical nurses.¹⁴ Of the registered nurses, there are estimates that approximately 130,000¹⁵ have additional education and skills that qualify them as advanced practice nurses in one of four categories: clinical nurse specialists, certified nurse midwives, certified registered nurse anesthetists, and nurse practitioners. Almost 45 percent (88,186) of advanced practice nurses have reported preparation as nurse practitioners.¹⁶

The majority of all licensed nurses, including advanced practice nurses, are involved in the direct care of patients, and therefore must address some aspects of pain management. Advanced practice nurses are also authorized by law or regulations in a majority of states to prescribe medications for conditions requiring pain management.¹⁷ Prescriptive authority by nurse practitioners is restricted through scope of practice regulations by the state, particularly in relation to controlled substances.¹⁸

Accountability in pain management

In today's health care delivery system, physicians are charged with considerable accountability for pain management.¹⁹ The scope of pain management, however, exceeds the boundaries of a single profession's practice. The following definition by the American Academy of Pain Management indicates

that adequate pain management requires an amalgamation of knowledge and techniques by a number of professionals:

[Pain management is the] systematic study of clinical and basic science and its application for the reduction of pain and suffering; the blending of tools, techniques and principles taken from the discrete healing art disciplines and reformulated as a holistic application for the reduction of pain and suffering; and a newly emerging discipline emphasizing an interdisciplinary approach with a goal of reduction of pain and suffering.²⁰

This definition indicates a shared accountability for pain management. Those with prescriptive authority, including physicians, advanced practice nurses, pharmacists, and psychologists, are necessarily accountable for their prescribing practices.²¹ Health care organizations, such as the Joint Commission on Accreditation of Health Care Organizations, also share the responsibility for assuring sound practices in the management of pain.²²

The Alabama Board of Nursing adopted an Accountability Model in 1999 that places the consumer as its central focus. Licensees, health care organizations, professional associations, educators, and the Board of Nursing interrelate and are held accountable for upholding standards of practice for public safety and welfare.²³ The essentials of collegial collaboration and accountability between physicians and pharmacists for pain management have aptly been analyzed and synthesized in recent research.²⁴ In nursing, accountability is often coupled with autonomy and authority to act,²⁵ not only as individual professionals, but in relation to organizational structures.²⁶

In pain management, all practitioners in health care who are legally authorized to prescribe controlled substances are accountable for upholding federal and state regulations. Although the states have laws that set parameters for the prescribing and dispensing of controlled substances, only seventeen states have adopted formal monitoring programs to promote adherence to laws governing the prescriptive practice of professionals.²⁷ Other efforts at monitoring stem primarily from the Drug Enforcement Administration's authority to enforce regulations for controlled substances under the Controlled Substances Act of 1970.²⁸

The accountability role that regulatory boards of professional health care providers play in relation to monitoring for pain management practices by health care professionals has not been clearly defined. The situations faced by medical boards to assure compliance with prescriptive practice while providing treatment for pain now confront other regulatory agencies. Nursing boards are no exception, particularly in matters concerning advanced practice where nursing has assumed greater authority in areas previously reserved under the domain of medical practice.

REGULATION OF NURSING PRACTICE

The first permissive nursing practice law was enacted in North Carolina on March 3, 1903. By 1952, all states and territories had such laws. In 1938, New York enacted the first mandatory licensure statute, which became effective in 1947. All states had mandatory licensure laws for professional and practical nurses by 1990.²⁹

Currently, agencies in sixty-one jurisdictions of the United States regulate nursing; fifty-five are located in the states, one in the District of Columbia, and five in U.S. territories. Five of those located in the states have separate boards that regulate licensed practical nurses. Thirty-one of the agencies are described as independent or autonomous boards of nursing; twenty-six are classified as units within umbrella regulatory agencies, and two have varying structures with cooperative functions with other agencies.³⁰ Laws regulating nursing, often referred to as “nurse practice acts,” typically specify an administrative authority (such as a board); define the authority, composition, and powers of the board; define nursing and the scope of practice; identify types of licensees and titles; specify state licensure requirements; protect titles; and identify grounds for disciplinary action.³¹ In most jurisdictions, the statutes also have provisions for the regulation of advanced practice nurses.

Advanced practice nurses are generally described as registered nurses, with a current license to practice, who are authorized for advanced practice by one or more regulatory agencies by virtue of having completed a formal educational program containing theory and skills practice that go beyond basic education.³² All advanced practice nurses share three essential characteristics: high degrees of autonomy in decision-making; direct accountability to patients or to the members of the health care team, or both; and advanced theoretical and practical knowledge gained at the graduate and postgraduate levels.³³

The four types of advanced practice nurses (nurse anesthetist, clinical nurse specialist, certified nurse midwife, and nurse practitioner) all evolved separately. With the exception of nurse practitioners, advanced practice nurse roles stemmed from clinical origins, at times in the laity, then evolved into formal disciplines with structured educational programs. The nurse anesthetist role is credited with being the first in advanced practice, originating in the 1870s. There are approximately 27,000 certified registered nurse anesthetists in the United States approved for practice by boards of nursing;³⁴ it is estimated that they administer 65 percent of all anesthetics given in the United States each year.³⁵

Beginning in the 1960s, the clinical nurse specialist role evolved from a registered nurse with advanced knowledge to a clinical specialty obtained by individuals pursuing a master's degree in nursing. Five clinical nurse specialist roles seem to dominate: direct practice, education, consultation, administration, and research.³⁶ According to the American Nurses Association's 2000 Prescriptive Authority Chart,³⁷ twenty-

nine states have authorized prescriptive practice for clinical nurse specialists, all except two with limitations on independent practice. The Health Resources and Services Administration report³⁸ states that there are approximately 70,000 clinical nurse specialists.

The certified nurse midwife's roles are generally limited to family planning; health care of women during pregnancy, childbirth, and postpartum; and health care of newborns. Specifications for licensure include being a registered nurse, education that is certified by the American College of Nurse-Midwives (usually a master's degree, although fourteen states allow a bachelor's degree),³⁹ and, depending on the state, approval for collaborative practice.⁴⁰ Forty-two state licensing jurisdictions acknowledged for practice 6,895 certified nurse midwives.⁴¹ Approximately 4.4 percent of the births in the United States were attended by board-approved nurse midwives in 2001.⁴²

Although each of the four roles of advanced nurse practice is considered significant in health care delivery, including pain management, this paper focuses primarily on the nurse practitioner role. The role of nurse practitioner was initiated in 1965⁴³ as a certificate program to prepare pediatric nurse practitioners under the collaborative work of a nurse, Loretta Ford, and a physician, Henry Silver, at the University of Colorado.⁴⁴ This program was initiated to increase access to care. The curriculum focused on health and wellness and prepared the nurses to identify symptoms and to diagnose and manage health care problems in children. The project was evaluated for effectiveness and resulted in federal appropriations, so that by the mid-1970s there were over 500 programs, mostly certificate programs, preparing nurse practitioners to deliver primary care. The programs shifted gradually from certificate programs to graduate-level education. By the 1980s, a majority of the nurse practitioner programs required a master's degree.⁴⁵

Today, over 500 graduate-level programs in more than 200 colleges and universities prepare nurse practitioners in at least fourteen specialty areas, such as acute care, adult health, child health/pediatrics, college health, emergency nursing, family nursing, geriatric nursing, neonatal nursing, obstetrical and/or gynecological and/or women's health, and psychiatric and/or mental health.⁴⁶ The result is, as stated above, over 88,000 nurse practitioners.

Nurse practitioners and prescriptive authority

Until the 1970s, statutes regulating nursing applied only to a relatively narrow and dependent scope of practice. The laws precluded independent treatment by nurses, and specified that nurses “carry out treatment and medications as prescribed by a licensed physician.”⁴⁷ Up until this time, advanced practice nursing was covered under general nursing regulations.⁴⁸

Absent specific statutory or regulatory recognition, the legitimate scope of practice for advanced practice nurses was

established in *Sermchief v. Gonzales*.⁴⁹ The Missouri Board of Registration for the Healing Arts, which licensed physicians and osteopaths, recommended the criminal prosecution of two nurse practitioners for the unlawful practice of medicine. Physicians who worked at the clinic with the nurses were also alleged by the board to be aiding and abetting the unauthorized practice of medicine. At the clinic, the nurses worked under standing orders and protocols signed by the clinic physicians and performed a variety of diagnostic and treatment functions. The circuit court upheld the board's findings, and the nurses and physicians appealed the court's order to the Missouri Supreme Court. In reversing the circuit court's decision, the Supreme Court judge ruled that the nurses were acting within their scope of practice and education as provided for by the Missouri Nurse Practice Act.⁵⁰

In 1971, the statutory definition of a registered nurse was expanded in Idaho to include advanced practice nursing.⁵¹ Other states followed suit. Presently, fifty-three of fifty-six boards that regulate registered nurses also regulate or recognize advanced practice registered nurses as a separate group

within the jurisdiction.⁵² Of these boards, forty-four have regulatory oversight of nurse practitioners, while in six jurisdictions nurse practitioners are jointly regulated by the board of nursing and the board of medicine.⁵³ Nurse practitioners have prescription authority in forty-eight jurisdictions, although the levels of authority are restricted primarily to protocols between advanced practice nurses and collaborating physicians.⁵⁴ Of these, thirty-nine jurisdictions provide nurse practitioners with prescriptive authority for controlled substances, along with other legend drugs. Table 1 provides a breakdown of prescriptive authority for nurse practitioners⁵⁵ according to drug schedules for controlled substances.⁵⁶

Collaborative practice and protocols

Although nurses have always practiced in collaboration with other professionals in health care delivery, the early nurse practice acts were written to avoid conflict in professional practice. The statutes provided for a narrowly defined independent role, with dependent roles dominating. As nursing

TABLE 1. NURSE PRACTITIONERS AND REGULATORY SCOPE OF PRESCRIPTIVE AUTHORITY FOR CONTROLLED SUBSTANCES.

SCOPE OF PRESCRIPTIVE AUTHORITY BY SCHEDULE*	NUMBER OF STATES/JURISDICTIONS	STATES/JURISDICTIONS BY NAME	COMMENTS
I-V	3	District of Columbia, Kansas Minnesota	
II-V	22	Alaska, Arizona, Colorado, Connecticut, Delaware, Idaho, Indiana, Iowa, Maryland, Massachusetts, Montana, New Hampshire, New Mexico, New York, North Carolina, Oregon, Rhode Island, Tennessee, Utah, Vermont, Washington, Wisconsin	
III-V	4	Arkansas, California, Oklahoma West Virginia	Although Illinois, Nebraska, and South Dakota also allow nurse practitioners to prescribe Schedules III-V, they do so with stipulations as to time
All other states that allow prescriptive authority for controlled substances do so with strict limitations, such as Louisiana, which requires individual application and justification of the need for such authority.			

*Examples of drugs included in each schedule include: Schedule I: Agents that are not usually acceptable for medical use and have a high potential for abuse and addiction (heroin, hallucinogens such as LSD and PCP, and marijuana (although some states allow marijuana to be used for medicinal purposes)). Schedule II: Agents that have a high potential for abuse but are used for pain management (hydromorphone (Dilaudid), methadone, meperidine (Demerol), cocaine, oxycodone (Percodan), and methylphenidate (Ritalin)). Schedule III-V: Agents regarded as having less potential for abuse and addiction (III: anabolic steroids, codeine and hydrocodone with aspirin or Tylenol, and some barbituates; IV: depressants such as diazepam (Valium), clonazepam (Klonopin), and alprazolam (Xanax); V: antitussives, antidiarrheal, and analgesics that may contain codeine).

progressed into recognized advanced practice, roles previously considered to be dependent began to develop into legally independent roles.⁵⁷ Collaboration occurred as a result of professional interaction between health care professionals in the mutual assessment, diagnosis, and treatment of patients.

Today, "collaboration" is a legally defined term in at least fifty statutes governing nursing practice.⁵⁸ These statutes vary widely among the states. The requirements may also vary according to the particular activity. In some states, for example, a more liberal level of collaboration is designated for general advanced practice, and a more structured level for prescribing drugs and devices. Some requirements vary according to the educational level of the nurse. Whatever the arrangement, under the newer statutes, medicine continues to play a significant role in the prescriptive authority allocated to nurse practitioners and, in some states, prescriptive authority is allowed only under the supervision of a physician.⁵⁹

Alabama is considered to be restrictive in its statutory limitations on independent practice for nurse practitioners. Although nurse practitioners have been authorized to practice under the Alabama Nurse Practice Act regulations since 1984, a specific law governing advanced practice nursing was not passed until 1995.⁶⁰ The statute requires collaborative practice with physicians for nurse practitioners and certified nurse midwives. Alabama's Board of Nursing and Board of Medical Examiners promulgated the regulations under the Act.⁶¹ The regulations for prescriptive authority allow nurse practitioners to practice under jointly approved protocols when prescribing legend drugs. The statute does not give nurses authority to prescribe drugs scheduled under the Alabama Uniform Controlled Substances Act.⁶² Furthermore, the collaborating physician has authority to limit the nurse practitioner's prescriptive privileges for noncontrolled substances without stating any reasons.

In Alabama, review of protocols is integral to approval for collaborative practice. The Board of Nursing and the Board of Medical Examiners review and act on recommendations by the Joint Committee of the State Board of Medical Examiners and the Board of Nursing for Advanced Practice Nurses, including recommendations on prescriptive authority.⁶³ Protocols, as designed by the Joint Committee, consist of accepted procedures for advanced nursing practice.⁶⁴ They also include a list of thirty legend drugs that may be approved for the nurse practitioner to prescribe.⁶⁵ Each applicant must have an agreement with a collaborating physician on the precise legend drugs that the nurse practitioner will be allowed to prescribe as well as any procedures beyond the ones authorized by the Joint Committee, usually procedures of an invasive nature, that the nurse practitioner will be able to perform. Neither the collaborative practice specialty nor education seems to have any bearing on the Joint Committee's approval. The support of the collaborating physician appears

to be the deciding factor, except for invasive procedures. Here, the Joint Committee asks for validation of expertise.

The protocol application requires a specific plan for monitoring protocol compliance.⁶⁶ Monitoring, however, may be conducted primarily in-house by the nurse practitioner and collaborating physician, or by the collaborating physician alone. Criteria for monitoring are not specified on the protocols nor are practices routinely audited for compliance by the Board of Nursing or the Board of Medical Examiners.

Effectiveness of nurse practitioners

Over a 30-year period, several studies have been conducted to evaluate the effectiveness of nurse practitioners as providers of primary care. All of the studies have shown that nurse practitioners achieved clinical outcomes equivalent to physicians on most variables. Patients have given high satisfaction ratings regarding the technical competence of nurse practitioners. Patients have also shown more compliance with nurse practitioners' health care promotion/treatments than with some physicians'.⁶⁷ A recent study was conducted involving advanced practice nursing authority and prescriptive practice.⁶⁸ Data were analyzed on 1,708 patients over a 2-month period using twenty-five different primary sites in one state. In no instances were patients harmed by advanced practice nurses, and in the majority of cases, patients benefited. Ninety-eight percent of the patients were positive about their care. All of the collaborating physicians rated the prescriptive authority of advanced practice nurses as beneficial to their patients and their practice.

The American Academy of Nurse Practitioners has, for several years, declared the entry educational level of nurse practitioners to be the master's degree, with courses of study in pathophysiology and pharmacology to prepare them to diagnose and prescribe medications and treatments within their specialty area. The Academy espouses the following position:

The ability of nurse practitioners to prescribe, without limitation, legend and controlled drugs, devices, adjunct health/medical services, durable medical goods, and other equipment and supplies is essential to provide cost-effective quality health care for diverse populations across the life span.⁶⁹

Although nurse practitioners have been held accountable in the courts for scope of practice matters,⁷⁰ a Westlaw computer search, using descriptors "nurse practitioner," "pain management," and "prescribing," generated six cases, none of which named a nurse practitioner as the sole defendant or plaintiff at the trial level.⁷¹ Also, none of the cases actually referenced controlled substances or the prescribing practices of nurse practitioners.

In Alabama, nurse practitioners may prescribe unscheduled drugs that are in an approved protocol with a

collaborating physician and on the formulary adopted by the Board of Medical Examiners and Board of Nursing.⁷² To date, the Alabama Board of Nursing has had only one disciplinary case involving a nurse practitioner directly related to writing a prescription. In this case, the nurse practitioner was reported to the Board of Nursing by a pharmacist who was asked to fill a prescription for an agent containing a controlled substance.⁷³ Upon investigating the report, the nurse practitioner admitted to prescribing the drug, but denied knowing that the drug was on the controlled schedule. This situation, plus exchange of information with in-state nurse practitioner educators regarding how specific core curriculum is not defined, raises questions about the educational preparedness of nurse practitioners in pharmacology and prescribing practices.⁷⁴ Such questions parallel concerns about the quality of nurse practitioner preparation in other states, as the numbers of new programs have increased in recent years.⁷⁵ Similar concerns have also been expressed by the National Advisory Council on Nurse Education and Practice in its report to the Secretary of Health and Human Services in 1997.⁷⁶

ALABAMA NURSE PRACTITIONERS' EXPERIENCES IN RELATION TO COLLABORATIVE PRACTICE, PRESCRIPTIVE AUTHORITY, AND PAIN MANAGEMENT

Findings from a previous study conducted by the Alabama Board of Nursing indicated concerns expressed by the nurse practitioners that limited prescribing authority affected their ability to provide adequate pain management.⁷⁷ Collaborative practice limitations regarding the prescription of controlled substances have not, however, been empirically established as actual barriers to pain management. This issue, as well as other factors related to regulations and prescribing practices, was reintroduced in this project. One aim was to establish a foundation for monitoring and investigating prescriptive practices for pain management in the future.

Seventy-two percent ($n = 771$ of 1,065) of all Alabama-approved nurse practitioners at the time of the survey had specialties in family health, acute care, and adult nursing. Of those, 46 percent ($n = 356$ of 771) responded to a questionnaire on pain management and prescriptive authority in fall 2001. Results from this survey are reported below. Valid percents were calculated separately for each data item according to the number of responses (i.e., missing responses were not included).

RESULTS

Characteristics of the study group

Of 356 respondents, 344 provided information on their areas of specialty. Family nurse practitioners constituted the

majority of the sample at 252 respondents (73.3 percent of those providing information on their area of specialty); 51 (14.8 percent) practiced as adult health practitioners; and 41 (11.9 percent) accounted for the remainder in acute care. Respondents' educational level varied depending on the year that they were recognized as nurse practitioners. For instance, one held only the diploma from a noncollegiate program and was grandfathered in under current regulations from an earlier recognized certificate program. A small group held the bachelor's degree in nursing and a certificate. Of the 346 respondents who provided information on the type of degree they held, 311 (89.8 percent) held a master's degree in nursing; 278 (80.3 percent), in particular, held the Master of Science degree in nursing. Ten respondents (2.9 percent) held a doctorate in nursing. Forty-nine (14.1 percent) were prepared in programs that awarded certificates for preparation as nurse practitioners beyond their basic education and, in some cases, beyond graduate education.

Of the 289 respondents who volunteered additional information about their education, 57 (19.7 percent) held post-baccalaureate nonnursing degrees in addition to their nurse practitioner educational preparation.

A majority of the participants, 305 (or 87.6 percent of the 348 respondents who provided information about the states in which they acquired their educational preparation) attended educational programs in Alabama. The remainder, 43 (12.4 percent), attended one or more of twenty-four educational programs in other states.

Of the 346 respondents who reported their sex, 315 (91.0 percent) were female. The number of males, 31 (9 percent), corresponded closely with the total male population of registered nurses in Alabama.⁷⁸ The average age of nurse practitioners in Alabama was 43, slightly younger than the average age of the national working registered nurse population at 45.2.⁷⁹

Educational preparation of nurse practitioners

Five of six graduate nursing education programs in Alabama provided outlines of pharmacology courses or information about the pharmacological content included in their certified registered nurse practitioner curricula.⁸⁰ All five stated the curriculum required satisfactory completion of a course in pharmacology. Four of the five declared the inclusion of content in pain management, prescriptive authority and practice, and controlled substances. Additionally, the same four offered opportunities to practice writing prescriptions, including pain management agents, that were not on the controlled substance list.⁸¹

Findings revealed the educational preparation for pharmacology and prescriptive authority was fairly consistent with the degree received. Of the 355 who responded to this question, 317 (89.3 percent) stated they had completed individual courses in pharmacology. Chi-square was significant, $p =$

0.001, for respondents who stated their individual courses covered pain management, prescriptive authority, and controlled substances. A slight variance was noted in those who stated they had an individual course in pharmacology. Chi-square was significant, $p = 0.000$, in relation to the 306 of the 356 responding (86.0 percent) who said yes, and the 50 (14.0 percent) who indicated no.

Significant variance was noted in the participants' preparation for decision-making when working under protocols related to controlled substances. Of the 349 responding, 193 (55.3 percent) answered they had no preparation. The 156 (44.7 percent) who answered yes did not comment on whether their preparation was in formal class or in their preceptor experience.

When asked if their curriculum adequately prepared them for prescribing controlled substances for pain management, 194 of the 347 respondents to this question (55.9 percent) said yes, and 153 (44.1 percent) said no. Chi-square was significant, $p = 0.028$. Table 2 provides a summary of how the respondents rated their educational preparation in pharmacology for prescriptive practice.

The respondents practicing as nurse practitioners were asked to rate their educational preparation as very comprehensive, comprehensive, somewhat comprehensive, and inadequate. Although 196 of the 346 respondents to this question (56.6 percent) rated their preparation as comprehensive to very comprehensive, 63 (18.2 percent) stated their preparation was inadequate in preparing them to independently exercise prescriptive authority for controlled substances for pain management. Chi-square was significant, $p = 0.004$, in relation to those who indicated they had a comprehensive preparation versus those who did not. Examples of deficits in their curricula were given individually by 156 of 256 respondents. The major recurring deficits were identified as pain management protocols; controlled substances (pharmacodynamics); titrating dosages; acute versus chronic pain management; drug abuse, detection of drug abuse, and management of drug abuse; and prescriptive practice procedures.

Summative statements expressed the need to improve the curricula in the respondents' educational programs. Several were explicit in saying they needed more concrete facts on pharmacology and less on taking histories. Some stated that their instructor did not insure their competence and that the instructor was not current in pain management treatment. (This included using out-of-date references.) Some said they got most of their knowledge through drug representatives. Others indicated poor support from instructors who were pharmacists; one respondent commented that the instructor "made us feel like criminals regarding controlled substances." Respondents did make positive comments about their preceptors, collaborative physicians, and formal clinical experiences rather than their other curricula.

Continued competence is a concern to regulatory agencies. To this end, the survey asked respondents to describe their approach to continuing education for prescriptive practice, particularly as related to pain management (see Table 3).

The inquiry about continuing education revealed that 151 of the 348 who responded to this question (43.4 percent) obtained updates on current pain management and prescriptive authority practice through formal continuing education courses; however, the remainder of the respondents (the majority) stated they updated their knowledge through informal means. Of this group, 116 (33.3 percent) answered that they updated their knowledge of pharmacology and prescriptive practice informally with "no continuing education"; 68 (19.5 percent) answered "casually, through work-related literature or casual exchange." Four (1.1 percent) stated "rarely, through social exchange." Nine (2.6 percent) gave responses that were categorized as "other." Examples included methods such as research and formal academic study.

The rate of occurrence for updating their knowledge of pain management and prescriptive authority was fairly evenly divided between "more than annually" (123 of 349 respondents to this question, or 35.2 percent); "at least annually"

TABLE 2. ALABAMA NURSE PRACTITIONERS' CONSIDERATION OF THEIR EDUCATIONAL PREPARATION IN PHARMACOLOGY FOR PRESCRIPTIVE PRACTICE.

	RATING	FREQUENCY	VALID PERCENT
Valid	Very comprehensive	62	17.9
	Comprehensive	134	38.7
	Somewhat comprehensive	87	25.1
	Inadequate	63	18.2
	Total	346	100
Missing		10	
Total		356	

TABLE 3. METHOD OF OBTAINING CONTINUING EDUCATION ON PHARMACOLOGY AND PRESCRIPTIVE PRACTICE FOR PAIN MANAGEMENT.

	METHOD OF OBTAINING CONTINUING EDUCATION	FREQUENCY	VALID PERCENT
Valid	Formally, through continuing education courses	151	43.4
	Informally, no continuing education courses	116	33.3
	Casually, through work-related literature or casual exchange	68	19.5
	Rarely, through social exchange	4	1.1
	Other	9	2.6
	Total	348	100
Missing		8	
Total		356	

(95 respondents, or 27.2 percent); and “occasionally, as opportunities arise” (109 respondents, or 31.2 percent). Another 22 (6.3 percent) indicated they “seldom or never” updated their knowledge on pain management.

Collaborative practice and pain management

A majority of the respondents, 316 of 350 (90.3 percent), identified themselves as being in collaborative practice.⁸² When those in collaborative practice were asked if they believed that collaborative practice, as permitted by the regulations, was too restrictive to effectively manage pain for their patients, 164 of the 311 responding (52.7 percent) replied no. The remaining respondents said yes (147 respondents, or 47.3 percent).

When asked if a lack of prescriptive authority for controlled substances delayed treatment for management of pain, 258 of the 311 responding (83.0 percent) said yes; 53 said no. Of the 258 who reported delays, 150 (48.2 percent of the 311 respondents) reported brief delays; 83 (26.7 percent), moderate delays; 25 (8.0 percent), long delays.

The participants were asked what effect adding controlled substances to their prescriptive authority would have on patient outcomes. There were 314 responses given. Of these, 78 (24.8 percent) stated that adding controlled substances would greatly enhance outcomes; 114 (36.3 percent) evaluated the addition as moderately enhancing outcomes; 85 (27.1

percent) reported the addition as slightly enhancing outcomes; and 37 (11.8 percent) said there would be no effect on outcomes. Chi-square was significant, $p = 0.000$, regarding the outcomes on patients' health.

Respondents were asked to report on what methods of pain management they used. As shown in Table 4, the methods included working under approved protocols with collaborating physicians, providing comfort measures, prescribing noncontrolled substances, and referring patients to physicians. Many respondents used more than one method.

Of the 356 respondents to the survey, 288 (80.9 percent) indicated they operated under protocols related to pain management that were established when they applied for collaborative practice. Of the 288 so responding, 149 (51.7 percent) stated the protocols for pain management were jointly developed between the collaborating physician and themselves; 54 (18.8 percent) reported by the physician alone; 38 (13.2 percent) said by themselves with the collaborating physician concurring; and 47 (16.3 percent) indicated other arrangements were made.

The respondents were asked to list the top five medications they prescribe for pain (controlled substances are not allowed by law to be prescribed by nurse practitioners in Alabama). The majority of the 304 responding, 243 (79.9 percent), listed a host of nonnarcotic agents prescribed, including Ibuprofen, Naproxen, Tylenol, Celebrex, and Vioxx

TABLE 4. METHODS OF PAIN MANAGEMENT EMPLOYED BY NURSE PRACTITIONERS LICENSED IN ALABAMA.

WORKING UNDER AGREED-UPON PROTOCOLS WITH COLLABORATING PHYSICIANS	PROVIDING COMFORT MEASURES	PRESCRIBING NON-CONTROLLED SUBSTANCES	REFERRING PATIENT TO PHYSICIAN
77.4% (n = 223/288)	94.5% (n = 259/274)	96.5% (n = 276/286)	81.2% (n = 212/261)

The figures shown represent the number of nurse practitioners who provided “yes” responses to each method that they used in managing pain as a percentage of those who said they did or did not use the particular method.

TABLE 5. DEGREE OF AUTONOMY EXERCISED IN PRESCRIBING MEDICATIONS BY NURSE PRACTITIONERS LICENSED IN ALABAMA.

	FREQUENCY	VALID PERCENT
No protocol exists for decision-making about controlled substances. Physician orders must be secured; no latitude is allowed.	144	47.8
Controlled substance is specified by the physician; protocols are dosage and route specific.	56	18.6
Controlled substance is specified; a dosage range and route are specified. The nurse practitioner exercises independent judgment on the specific amount within the range to be given and proceeds without consulting the physician.	32	10.6
Controlled substance and dosage range are specified; route for administration is left to the discretion of the nurse practitioner, who proceeds without consulting the physician.	5	1.7
Controlled substance is specified; dosage and route are left to the discretion of the nurse practitioner, who proceeds without consulting the physician.	18	6.0
Other	46	15.3
Total	301	100

as their top five. The remainder, 61 (20.1 percent), stated they ordered, with their collaborating physicians' approval, controlled substances ranging from schedules II to IV. The top ten scheduled medications "ordered" by these respondents were Lorcet, Lortab, OxyContin, Tylenol with Codeine, Barbitol preparations, Demerol, Morphine Sulphate, Vicoden, Stadol, and Mepergan (in-house only).

Data indicated that while the nurse practitioners stated they ordered the medications, some type of protocol was followed. For some, considerable latitude was allowed for the management of pain for their patients. Table 5 provides a breakdown of the responses regarding the autonomy exercised by the nurse practitioners.

As shown in Table 5, 144 of the 301 responding (47.8 percent) stated they do not operate under protocols but on physician orders for controlled substances, with no latitude given for prescribing the substance, dosage, or route of medication. All others have some latitude for making decisions about dosage and route for administration. For most, the controlled substance is physician-specified and protocols that are physician-developed are used by the nurse practitioner in making decisions about the range of dosage and route. Forty-six respondents (15.3 percent) provided other descriptions relative to autonomy exercised in managing pain. In general, these "other" comments showed that considerable latitude was given to the nurse practitioners, but in consultation with the physician. The consultation may have been retrospective. For instance, one said, "I make all decisions about the drug, route, frequency, amount dispensed, then my M.D.

writes the prescription for me." Another stated, "while no protocol exists, my request for specific controlled substances is almost always what we do. I cannot ever remember being overruled." "Protocols" were reported as both written and unwritten. Some stated that their collaborating physician left signed prescription pads for emergencies.

Barriers to pain management, as perceived by educators and nurse practitioners

Educators from nurse practitioner educational programs in Alabama were asked to provide, in addition to information about curricula, input regarding their perceptions about barriers to pain management. Three responded and listed the first barrier as restrictions that prohibit the prescribing of narcotic analgesics. This was clarified by one respondent, who stated, "Without the collaborating physician on-site, there are delays in securing medications for pain management." Collaborating physicians may practice at sites that are remote from their primary practicing location. Thus, physicians are not always on-site, nor readily available to respond to situations requiring direct intervention, such as acute pain management. Prescribing authority is limited by nursing regulations.⁸³ Another offered an aside: "Some physicians use unlicensed or non-specific credentialed persons to call in prescriptions due to the limitations on CRNP practice. This is not desirable [from] a public safety perspective."

Another barrier to practice listed was ineligibility for third-party reimbursement. This particular comment may

TABLE 6. TOP FIVE BARRIERS TO EFFECTIVE PAIN MANAGEMENT AS PERCEIVED BY ALABAMA NURSE PRACTITIONERS.

BARRIER	FREQUENCY	VALID PERCENT
Educational deficit	23	7.5
Denial of third-party payment	28	9.2
Physician resistance to prescriptive authority	35	11.5
Limitations on scope of practice	42	13.8
Restrictions by regulatory agencies: Boards of Nursing, Pharmacy, Medical Examiner	147	48.2
All others	30	9.8
Total	305	100

have merit when considering previous research⁸⁴ on lack of coverage by insurance companies related to treatment for pain.

We also surveyed nurse practitioners regarding their perceptions about barriers to pain management. Table 6 provides a summary of the top five perceived barriers. Barriers were primarily attributed to restrictions imposed by external sources, such as regulatory agencies that place limitations on the scope of authority for prescribing controlled substances. However, qualitative analysis revealed that some barriers were primarily intrinsic. For instance, approximately 50 percent of the respondents indicated hesitancy to assume independent responsibility and accountability for prescribing controlled substances. Chi-square was significant, $p = 0.051$, when cross-tabulating the degree of autonomy allowed in use of protocols with adequacy of preparation to independently assume responsibility and accountability for prescribing controlled substances for pain management. Reasons varied for those who responded "other." Among the most prominent were lack of preparation and experience in educational programs, a need for updated protocols, fear of liability, and curriculum deficits in areas such as chronic pain management.

Legal scope of practice for prescriptive authority

The nurse practitioners were asked to provide information about potential or actual violations of the legal scope of practice in relation to prescriptive authority and other relevant data. There were 314 respondents who had observed their colleagues operating outside the lawful scope of practice. Forty-eight (15.3 percent) stated they were actually aware of nurse practitioners who went beyond their approved scope of practice. Fifty-three individual comments were made about infractions. Most involved exceeding the scope of authority on prescriptive practice for controlled substances for pain management. In such cases, the collaborating physician was implicated. Examples were cited in which the collaborating physician signed a blank prescription pad to cover emergencies in pain management. Others called in prescriptions using the physician's Drug Enforcement Administration number.

Other infractions were noted, including distributing samples without written prescriptions.

When asked if they believed practicing outside one's scope of practice was necessary for effective pain management, 220 of the 302 responding (72.8 percent) said no; and 82 (27.2 percent) said yes. A significant association was determined, $p = 0.000$, when cross-tabulating the quantitative results with those related to an inquiry about whether operating outside the scope of practice could cause harm to the public. Of the 290 responding, 190 (65.5 percent) said that exceeding the legitimate scope of practice could result in potential harm. Qualitative responses were unique. While the questions addressed potential harm to the public, responses primarily specified potential harm to the nurse practitioners' professional well-being. Legal liability plus the potential for having charges brought (even without harm to the patient) could negatively affect their colleagues and the profession. For example, one respondent wrote, "not specifically a harm to the public but very definitely potential harm to CRNPs' license and ability to practice at all." Other comments focused on how nurse practitioners did not feel adequately prepared to do more than they were doing for pain management (e.g., "Since CRNPs are not fully educated regarding the use of controlled substances, they may be inappropriately prescribing, ultimately causing potential harm.").

When asked if they believed whether a nurse practitioner should be subject to disciplinary action by the Board of Nursing for operating outside his or her scope of practice, 203 of the 267 responding to this question (76.0 percent) stated yes. A majority commented that nurse practitioners should function within the law, but they declined to readily invite the board's intervention. For instance, one said, "These matters should be settled between the CRNP and the physician." Another said, "I believe a 'warning' should be given and this should suffice. The Board of Nursing has never proven to be 'trustworthy' or 'working nursing' friendly in my personal experience. The [Board of Nursing] seems to be too eager to discipline and not eager enough to be supportive and understanding!!!"

The 82 respondents who stated that practicing outside one's scope of authority was necessary for pain management

provided 108 qualitative responses to clarify or amplify their position. A majority of these said they deferred to the law but had concerns about the inadequacy of treatment. A few admitted to ordering drugs and then getting physician coverage. One clarified his or her practicing outside the scope: "As explained above, let me reinforce that when I do this, I make every effort to inform the [doctor] ASAP. All [doctors] that I have dealt with are supportive in this practice. Most have difficulty understanding the limits placed on my practice." Another commented, "The scope and prescriptive authority need to be changed. I cannot do all for my patients and give maximum care with my hands tied in pain management."

The respondents who did not believe nurse practitioners should operate outside their practice expressed concern about abiding by the law, but they also worried about their patients' well-being. One stated, "Legalities force me to stay in my scope." Another stated, "As it stands now in Alabama, [nurse practitioners] don't even have narcotic analgesics as an option. I see patients who need better 'narc' control, but am not allowed to provide due to physician's legal concerns — directly due to recent Oxycontin concerns." Another said, "I do not prescribe outside my scope of authority, but it is sometimes hard to sleep at night when I know that my patients are not getting enough to relieve their pain."

Some indicated that the addition of drugs, previously unscheduled, to scheduled lists have impaired their pain management drastically. Another pointedly implicated a major insurance company and the medical association: "The biggest barrier in the state is BlueCross BlueShield and the Alabama Medical Association." Still another said, "It may be in the patient's best interest for a [nurse practitioner] to practice outside the scope of practice. That makes a major catch 22 for the patient and the [nurse practitioner]. Currently there is no right answer." Another stated, "I think CRNPs are doing their best to provide care to patients. The legal rules always lag behind practice in this state. CRNPs have always practiced beyond their scope of authority in the state." Some admitted there are times the Board of Nursing should intervene: "Situationally[,] based on what is done, the harm caused, and how far outside the scope of practice." Another capped it by saying, "What is the point of a rule if it is not enforced." This was reinforced by one who said, "We must have a governing body that is in place to provide a clear scope of practice and who protects the public."

Although 203 of 267 respondents supported disciplinary action by the Board of Nursing, 196 of 270 respondents (72.6 percent) also stated there are incidents in which leniency should be granted. Chi-square was significant, $p = 0.002$, for those who supported disciplinary action to those who perceived a need for leniency. Qualitatively, this group described a need for case-by-case consideration based on the circumstances, education of the nurse practitioner, the type of practice, the role of the collaborating physician, patient

harm, isolated versus repetitive situations, and whether there was any substance abuse involvement.

Only 6 of 312 respondents reported that they had been involved in a disciplinary process. Three reported having been named in a malpractice suit. Only one of these cases also involved the physician. The same case also resulted in disciplinary action by a governmental agency. Chi-square was not significant relative to education, or nurse practitioner or pharmacology preparation, regarding those who had disciplinary action relative to pain management preparation.

Monitoring and investigating of nurse practitioners in pain management

In this section, we address monitoring as a means of promoting compliance with laws and regulations that affect pain management. A brief synopsis of the "state of the states" on monitoring by boards of nursing is included. Results are then presented from interviews with investigators for the Alabama Board of Nursing and the Board of Medical Examiners that focused on monitoring and investigative procedures regarding prescriptive authority. These findings are then linked to perceptions of the Alabama nurse practitioners on accountability and quality assurance for pain management.

State of the states and monitoring for compliance with prescriptive authority

Thirty-five of 50 state nursing boards regulating registered nurses responded to an e-mail inquiry regarding monitoring processes for prescriptive practice.⁸⁵ Twenty-eight of the respondents indicated that they do not have a formal monitoring program. Six specified that they act primarily on complaints. West Virginia reported plans to initiate, in February 2002, an on-site audit program involving random sampling of advanced practice nurses to determine conformity of collaborative practice agreements with actual practice in prescriptive authority.⁸⁶ Idaho also indicated plans for an audit program to begin in 2002. Both of these programs will be subject to evaluation.

Interviews with Board of Nursing investigators

Three Alabama Board of Nursing investigators were interviewed based on fifteen questions related to the investigative process and monitoring for prescriptive practice compliance.⁸⁷ An introductory statement as to the purpose of the project was provided by the interviewers. The investigators collectively accounted for ten cases over the past 7 years that involved nurse practitioners. Six of the cases had been investigated in the years 2000–2001; three in the past 6 months. They described their roles in the investigative process as follows: The process is initiated with the receipt of a complaint. Typically, complaints are generated from a variety of sources, such as an anonymous call, sometimes a dissatisfied patient,

spouse, physician, or pharmacist. The individual reporting the concern or complaint is asked to submit the complaint in writing (no name is required). When the complaint is received in writing, it is docketed and an investigator is assigned to the case. In cases involving drugs, whether for abuse or violation of prescriptive authority, a subpoena is issued for a prescription profile. Once the profile is received from the pharmacy, a determination is made as to whether a patient's medical record is required for additional investigation (if it is a legitimate patient). Illegal prescriptions are sometimes written for friends, and in these cases there may be no medical records to review. If required, the nurse is interviewed. Upon completion of the investigation, the findings of fact are submitted to the board's legal counsel (the state assistant attorney general) for review and recommendations, including possible prosecution. The investigation may be extended if legal counsel perceives a need for additional information.

The desirable outcome of the investigation was described as assuring that facts and evidence are properly documented so that the complaint can be substantiated or disproved. In cases that related to the prescriptive authority of nurse practitioners, investigators indicated a need to assure that all individuals responsible for the nurse's practice are interviewed, including the collaborating physician.

Violations by nurse practitioners that required investigation included treating a patient without the physician's knowledge; exceeding the scope of practice in prescribing; acts of omission, such as failing to adequately assess a patient's condition; and failing to keep up-to-date knowledge of drugs.

The investigators emphasized that in their view the Board of Nursing does not adequately monitor prescriptive practice in pain management. One stated, "We just wait for the complaint; then when we do get the complaint, we must wait until it is submitted in writing." "The only way we monitor CRNPs is on application for approval [of the collaborative practice] or complaints from another source."

Another investigator stated:

When working cases, the CRNPs just seem to be out there working without specific protocols being followed. They seem to be doing what they do with or without a physician. When reviewing data related to a complaint you can find incomplete information on the prescription; an example of this would be the physician not signing off on the prescription; however, I haven't seen an overwhelming amount of complaints regarding CRNPs and prescriptive authority. We don't know, they may or may not be going by the book. There is not enough monitoring to know.

Still another of the investigators stated, "We have to depend on somebody else to let us know what is being done." For instance, a case was being investigated on one of the

alternative disciplinary participants⁸⁸ whose drug screen was positive. The outcome was that another nurse practitioner had prescribed phenobarbital for her. The nurse allegedly did not know that the drug was on a controlled substance schedule.

Each investigator had stories relative to problems arising out of collaborative practice. In one case, a nurse practitioner was having a relationship with the collaborating physician that had ended. This also ended the collaborative arrangement, yet she continued to practice. Investigators reported that in two cases, physicians were not cooperative about providing patients' records. In other cases, physicians claimed that they did not know of problems with the nurse practitioner. One of the investigators described a situation with "out the back door" treatment. The nurse practitioner was writing prescriptions using the physician's signature for friends without making a record. Apparently, a pharmacist became suspicious and reported his concern to the Board of Nursing.

The investigators described the greatest barrier to conducting an investigation as the inability to obtain records in a timely manner, or even at all. One stated, "It is very hard getting national pharmacies to release records even when subpoenaed." The locally owned pharmacies usually provided a rapid response, but apparently the national pharmacies have considerable steps to go through before releasing the records, even under subpoena. Also, obtaining records from physicians sometimes proved difficult in that the physicians do not wish to be involved. Board of Nursing investigators must have a specific patient's name to issue a subpoena. Nurse practitioners have been equally uncooperative. At times, the Board of Medical Examiners and the Board of Nursing investigators have been able to work together when both a collaborating physician and nurse practitioner were jointly implicated.

When asked if the Board of Nursing was addressing the magnitude of violations regarding prescribing controlled substances in collaborative practice, one stated, "yes, all allowed by the law." Two others expressed that "we have not touched the tip of the iceberg." One was highly supportive of having a monitoring system; "We could try it at least. We have nothing now." Another was cautious, saying, "It would be good to find out if a true problem exists."

Two of the investigators did not perceive their role as one of quality monitoring. The third was open to this role, saying, "Quality management would mean everyone would have to work close together as a team; we would have a more thorough process; we could concentrate on specific assignments/tasks and not have to try and look at the entire picture with every violation."

When asked if a formal continuous monitoring process was needed, two of the investigators again asked if a true problem exists. All three of the investigators stated emphatically that they believed that extending prescriptive authority

for controlled substances would create more problems for public safety and welfare.

The investigators delineated operational necessities for effective monitoring of prescriptive practice in collaborative arrangements, such as authority to review medical files; obtaining pharmacy records in a timely manner, preferably without subpoenas (this one was clarified as requiring legislative authority to act); authority to interview both the physician and nurse practitioner if needed; and having interstate sharing on complaints.

Investigators also thought it would be necessary to inform/teach collaborative physicians about collaborative practice; require nurse practitioners to follow specific/proper protocols; establish proper protocols; and do random checking to determine if physicians and nurse practitioners were following protocols (e.g., surprise visits to check records).

Interviews with Board of Medical Examiners investigators

Five of the six Alabama Board of Medical Examiners investigators participated in a group interview, with questions from the interviews with the Board of Nursing investigators modified to accommodate the collaborating physician role.⁸⁹ The investigators concurred that they had investigated only four complaints involving controlled substances and prescriptive authority by nurse practitioners in collaborative practice since 1995. One investigation was currently in process. In all cases, the investigators contacted the Board of Nursing and reported the nurse practitioner's involvement. The Board of Nursing assumed responsibility for investigating and taking action against the nurse practitioners involved in the case, while the Board of Medical Examiners continued the investigative process involving the physicians. One of the four complaints was settled informally due to insufficient evidence to file a formal complaint. In another case, charges were brought against the physician and the nurse practitioner by their respective boards. In another, the Board of Nursing revoked the nurse practitioner's license. Action against the physician was reserved due to his leaving the state. The third case was continued. All of the cases involved violations of prescriptive authority, such as forging prescriptions, altering prescriptions, and using presigned prescriptions. In two cases, the physicians were implicated in condoning the practice. Another did not provide appropriate supervision.

According to the investigators, when the investigation exhausts all leads and there is sufficient evidence to establish probable cause, the case is presented to the Board of Medical Examiners. The board may then seek consultation from the Joint Committee for additional information or clarification regarding the collaborative practice. Final actions are delivered by the board.

Although the Board of Medical Examiners investigators stated that they investigate every complaint they receive, they

do not believe that their board or the Board of Nursing are adequately monitoring prescriptive practice in pain management. One of the investigators put it this way: "We don't have a firm handle on pain management. Only one in ten physicians strictly follows the pain management guidelines."⁹⁰

All of the investigators agreed that there is a need for a formal continuous monitoring process for case detection, but cited lack of manpower as a deterrent to instituting such a program. They generally conceded that having a quality monitoring system may help capture violations relative to prescriptive practice of controlled substances in collaborative practice.

When asked how they perceived their role in implementing a quality management system, two of the investigators said almost simultaneously that the role of their board and the Board of Nursing is regulatory. As such, the monitoring role would essentially be investigative. For that reason, the quality management program for compliance would fall under their jurisdiction.

The investigators delineated components and methods essential for instituting a quality management program. These included sufficient finances to provide equipment (e.g., computer hardware), personnel sufficient to support the investigative staff, and increased numbers of investigators to implement the program. Paramount to the program would be having legislative authority with rules and standard operating procedures to carry out the program efficiently and effectively. The investigators specified that the necessary personnel would possess investigative knowledge and experience, and possibly have a medical background.

The investigators stated emphatically that the Board of Nursing investigators were severely restricted in their ability to do a good job because they did not have the legislative authority to access records without subpoena. The investigators saw a need for conducting a shared program in monitoring as long as collaborative practice exists. As with the Board of Nursing investigators, these investigators were strongly opposed to granting nurse practitioners prescriptive authority for controlled substances.

Nurse practitioners' perceptions about monitoring and accountability

Opinions from the nurse practitioners in our survey regarding compliance monitoring were generally positive. Of the 283 respondents who expressed an opinion, 226 (79.9 percent) supported mandatory monitoring for quality control in the event that prescriptive authority for controlled substances should be granted. Numerous comments were given relative to how the monitoring should be conducted. The most common approaches were monitoring by the Drug Enforcement Administration; holding the collaborating physician accountable; Board of Nursing programs; and self-regulation by the nurse practitioners themselves. Several made a point of say-

ing that monitoring should be conducted by random sampling. Some were explicit in procedural options, such as making copies of all charts, computer tracking of prescriptions, and chart audits.

Three questions were asked of survey participants relative to accountability:

- For what should boards of nursing be held accountable in regulating pain management?
- What are concrete ways for a state board of nursing to promote quality of care in pain management?
- For what should the nurse practitioner be held accountable?

Certain themes dominated the responses to the first question about board accountability for pain management. Respondents said that the boards of nursing should be accountable for regulation of prescribers, including establishing laws and rules for qualifications (with background checks); compliance evaluation and monitoring; and discipline for failure to comply. Respondents stated that the boards should establish standards for education programs and require continuing education for nurses to update their knowledge on prescriptive authority and pain management; monitor prescriptive practice through audits, site visits, and random sampling; and establish protocols for pain management, including meeting national standards for pain management.

Regarding the second question, qualitative comments were received from 279 respondents, each specifying concrete ways for a board of nursing to promote quality of care in pain management. Six themes emerged that corresponded, from an operational perspective, with the areas for which the respondents thought the boards of nursing should be held accountable. Respondents recommended that the board should require continuing education in pharmacology, pain management, and prescriptive authority, with a mandate for updating pharmacology knowledge on an annual (or more frequent) basis. They also believed that the board should make classes available, as well as develop standard protocols, for pain management and prescriptive practice in controlled substances for physicians and nurse practitioners. Respondents desired specific guidelines for the substances allowed and the appropriate dosage and refill amounts in relation to specific conditions. Respondents called for the board to endorse pain management protocols developed by national regulatory boards. Several specified that the boards of nursing should be responsible for monitoring compliance with the guidelines. Respondents thought the board should improve formal education in prescribing in the nurse practitioner curricula, including a standardized curriculum. Respondents suggested that their state board allow nurse practitioners the full range of prescriptive authority to treat pain. This would align Alabama's regulations with those of other states. Respondents also argued that the board should use progressive disciplinary measures for violations.

In response to the third question regarding accountability by nurse practitioners, 262 respondents provided written comments. Major themes included upholding standards of care; working within protocols of collaborative agreement; relieving pain for patients; protecting patients from harm; and maintaining and updating knowledge through continuing education.

A few respondents commented that it is the nurse practitioner who is accountable for his or her practice, not the Board of Nursing. Numerous other comments, however, placed joint accountability on the practitioner and others, such as the Board of Nursing. Three independent comments demonstrate this point. They also corresponded well with the Board of Nursing's Accountability Model:

All treatments rendered by the CRNP are her/his responsibility. [The] Board of Nursing can set minimum requirements in education and continuing education for pain management and controlled substances, but practice should be up to the CRNP and her/his collaborating physician. Prescribing controlled substances should be allowed for complete care to the patient.

The CRNP should always be held accountable for his/her actions. I believe the employing agency should be responsible/accountable for teaching and regulating pain management.

CRNP: Continuing education and literature review. Board of Nursing: provide update on new meds.

DISCUSSION AND CONCLUSIONS

This project was initiated as a result of the Alabama Board of Nursing's interest in assuring competent pain management and compliance by advanced practice nurses with regulations for prescriptive authority in collaborative practice.

The survey results support recommendations that boards that regulate advanced practice nurses direct considerable attention to bringing about improvements in curricula in the area of pain management. We further recommend that all boards that regulate advanced practice nursing become proactive in mandating continuing education in prescriptive practice, including knowledge of pharmacology that affects pain management. The survey data indicate that nurse practitioners are concerned about the well-being of their patients, and that a majority of the nurse practitioners in the study are willing to be accountable for their actions either jointly with other stakeholders or individually.

This project revealed minimal published data on monitoring and investigation processes employed by other boards of nursing. Data obtained by the brief informational e-mail

survey indicated that few boards of nursing have formal monitoring systems in place to determine compliance with practice protocols, including those protocols with prescriptive authority. All respond only to complaints of potential statutory violations. Further research is recommended in the area of monitoring.

The current monitoring of certified registered nurse practitioners in Alabama is limited to the biennial monitoring of continuing education compliance, reviewing of credentials and protocols during the application process for approval to practice, and conducting an investigation when a complaint specifying a potential violation is received. Monitoring for compliance with prescriptive authority is complaint-driven. Given the responses of the Alabama nurse practitioners in our survey and the statements of the investigators from the Board of Nursing and the Board of Medical Examiners, careful consideration should be given to state boards' instituting a monitoring system to determine compliance with protocols for collaborative practice. An analysis of the cost to the potential return on the investment should be considered, including the likely manpower allocations that would be needed to execute a monitoring system. Potential advantages of such a program should be weighed against potential disadvantages. Already there is an admitted undertreatment of pain due to a fear of regulatory intervention into medical practice. Also, questions are asked about the need to have another overseeing agency monitor the practice of health care providers when considerable effort is already extended in documentation of prescribed controlled substances to meet federal Drug Enforcement Administration mandates and those of accrediting bodies for quality management that address pain management. Questions are also raised about invasions of privacy and of professional practice without cause.

The primary investigation process used by state regulatory agencies is complaint-driven. While concern is expressed for assuring that patients receive quality treatment, the primary focus of the regulatory agencies has been on assuring compliance with controlled substance regulations. Now, a new focus is developing for assuring compliance with pain management policies.

A number of problems were identified in the investigation process when complaints involve collaborative practice. The most frequently mentioned problem was the inability to obtain the records essential to building a case for adjudication. This has occurred because of a lack of cooperation from physicians and nurse practitioners. Health care organizations and corporate pharmacies were also implicated in causing delays due to legal or administrative barriers restricting immediate release of records, even under subpoena. Investigators reported collusion between collaborating physicians and nurse practitioners when investigations were conducted that involved nurse practitioners operating outside the scope of authority or beyond the accepted standard of practice for protocols. Securing sufficient evidence to sub-

stantiate complaints regarding nurse practitioners' prescriptive practice was also described as a problem.

The solutions offered to address these problems ranged from "trying" a quality monitoring approach to securing legislative approval for obtaining records expediently and unannounced. The latter was described as essential. Developing a shared responsibility between the Board of Medical Examiners and the Board of Nursing in planning and implementing a structured monitoring and investigative program was also recommended. Although restrictive, the investigators of both boards definitively opposed extending prescriptive authority for controlled substances to advanced practice nurses.

Over the last 30 years, the effectiveness of nurse practitioners has been established in terms of clinical outcomes and patient satisfaction. This study confirmed the belief, identified by previous studies, that the lack of prescriptive authority has delayed patient treatment for pain. However, this study also showed that almost half of Alabama nurse practitioners did not feel adequately prepared by their educational programs for prescribing controlled substances for pain, and currently there is inconsistency in the methods by which nurse practitioners update their knowledge of pain management. Many nurse practitioners did feel a high degree of collaboration and autonomy in their practices and did not feel they would need to practice outside their scope of practice to adequately address patients' pain. The investigators from the Board of Nursing and the Board of Medical Examiners indicated that the current state of events does not allow for quality monitoring, as investigations are complaint-based only. However, the majority of nurse practitioners welcomed increased quality monitoring should prescriptive authority for controlled substances be granted.

ACKNOWLEDGMENTS

This project was supported by a grant from the Mayday Fund through the American Society of Law, Medicine & Ethics. We wish to extend our appreciation for research support to N. Genell Lee, M.S.N., R.N., J.D., executive officer of the Alabama Board of Nursing; Charlie J. Dickson, Ed.D., R.N., FAAN; Anne Permaloff, Ph.D.; members of the Advisory Council on Research and former Board of Nursing members; and Nancy Bean and Brenda Caprara, administrative assistants to the Alabama Board of Nursing.

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21. An EBSCO Host Academic search was conducted by the Alabama Public Library Service in Montgomery on December 18, 2001. Thirty-one articles referenced prescriptive authority for pain management by professionals such as pharmacists, psychologists, and advanced practice nurses.

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24. D.B. Brushwood, "From Confrontation to Collaboration: Collegial Accountability and the Expanding Role of Pharmacists in the Management of Chronic Pain," *Journal of Law, Medicine & Ethics*, 29, no. 1 (2001): 69-93.

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27. Joranson et al., *supra* note 6, at 232.

28. *Id.* at 233. Additionally, forty-four states have adopted state pain policies through laws and regulations. See D.E. Joranson et al., 2001 *Annual Review of State Pain Policies: A Question of Balance* (Madison: Pain & Policy Studies Group, University of Wisconsin Comprehensive Cancer Center, 2002), available at <www.medsch.wisc.edu/painpolicy/publicat/01annrev/contents.htm>.
29. L.Y. Kelly and L.A. Joel, *Dimensions of Professional Nursing* (New York: McGraw-Hill, 1995): at 467.
30. National Council of State Boards of Nursing, *supra* note 17, at 1.
31. National Council of State Boards of Nursing, *Nursing Regulation*, at <http://www.ncsbn.org/public/regulation/regulation_index.htm> (last visited April 11, 2002).
32. G.D. Sherwood et al., "Defining Nurse Practitioner Scope of Practice: Expanding Primary Care Services," *The Internet Journal of Advanced Nursing Practice*, 1, no. 2 (1997), at <<http://216.39.195.244/ostia/index.php?xmlFilePath=journals/ijanp/vol1n2/scope.xml>>.
33. M.L. Gray, "Advanced Practice Nursing Roles: Preparation and Scope of Practice," in N.L. Chaska, ed., *The Nursing Profession Tomorrow and Beyond* (Thousand Oaks, California: Sage Publishers, 2001): 515–26, at 517.
34. Crawford et al., *supra* note 15.
35. C. Curtis, *The ABC's of Advanced Practice Nursing*, Wild Iris Medical Education Website, available at <<http://www.nursingceu.com/NCEU/courses/advpraccc/>> (last visited April 3, 2002).
36. *Id.*
37. W.Y. Carson, American Nurses Association, 2000 *Prescriptive Authority Chart* (revised February 1, 2000), available at <<http://www.nursingworld.org/gova/charts/dea.htm>>.
38. Spratley et al., *supra* note 14.
39. Gray, *supra* note 33, at 518.
40. Curtis, *supra* note 35.
41. Crawford et al., *supra* note 15.
42. Curtis, *supra* note 35.
43. P.A. Kalish and B.J. Kalish, *The Advance of American Nursing* (Boston: Little, Brown and Company, 1978): at 660.
44. Sherwood et al., *supra* note 32.
45. Gray, *supra* note 33, at 520.
46. National Advisory Council on Nurse Education and Practice, *Report to the Secretary of Health and Human Services: Federal Support for the Preparation of the Nurse Practitioner Workforce through Title VIII* (Rockville, Maryland: U.S. Department of Health and Human Services, Health Resources and Services Administration, 1997): at 14–15. See also Crawford et al., *supra* note 15.
47. Safriet, *supra* note 18, at 417.
48. Gray, *supra* note 33, at 517.
49. *Sermchief v. Gonzales*, 660 S.W.2d 683 (Mo. 1983).
50. Kelly and Joel, *supra* note 29, at 476–77; C.P. Cournoyer, *The Nurse Manager and the Law* (Rockville, Maryland: Aspen Publishers, 1989): at 118.
51. Cournoyer, *supra* note 50, at 109.
52. National Council of State Boards of Nursing, *supra* note 17, at 230.
53. *Id.* at 241.
54. Carson, *supra* note 37.
55. Ala. Code § 34-21-81 (4)(a) (2002). Nurse practitioners in Alabama demonstrate by certification the "advance knowledge and skills" necessary for "consultation, collaborative management, or referral as indicated by the health status of the client" and thereafter practice as certified registered nurse practitioners.
56. Peine, *supra* note 13, at "Historical Background." In this section, a historical background is given relative to the Controlled Substances Act (1970) and subsequent regulations.
57. "Collaboration and Independent Practice: Ongoing Issues for Nursing," *Nursing Trends and Issues* (column), *Nursing World*, 3, no. 5 (May 1998), available at <<http://www.nursingworld.org/readroom/nti/9805nti.htm>>.
58. Carson, *supra* note 37.
59. *Id.*
60. Ala. Code § 34-21-80 (2002).
61. Ala. Admin. Code r. 610-X-9 (2002).
62. Ala. Code § 34-21-81 (8) (2002).
63. Ala. Admin. Code r. 610-X-9 (2002).
64. Alabama Board of Nursing, *Application for Approval to Practice as an Advanced Practice Nurse in Alabama* (December 2002), available at <<http://www.abn.state.al.us/downloads/applications/apn-1.pdf>>.
65. *Id.* The list of approved legend drugs for consideration by the Joint Committee for nurse practitioners to prescribe is as follows: antihistamine and decongestant drugs; analgesics and antipyretics; blood derivatives; coagulation agents; central nervous system agents; agents of electrolytic, caloric, and water balance; expectorants and cough preparation; gastrointestinal drugs; prosthetics/orthotics; local anesthetics; pulmonary drugs; spasmolytics; vitamins; antiinfective agents; autonomic drugs; blood formation; cardiovascular drugs; diagnostic agents; enzymes; ophthalmic drugs; antiinflammatory drugs; hormone and synthetic substitutes; birth control drugs and devices; serums, toxoids, and vaccines; antineoplastic agents; heavy metals; radioactive agents; gold compounds; oxytoxics; and an "other" category.
66. Alabama Board of Nursing, *supra* note 64.
67. Sherwood et al., *supra* note 32.
68. A.B. Hamric et al., "Outcomes Associated with Advanced Nursing Practice Prescriptive Authority," *Journal of American Nurse Practitioners*, 10, no. 38 (March 1998): 113–118, at 118.
69. American Academy of Nurse Practitioners, *Position Statement on Nurse Practitioner Prescriptive Privilege* (revised 2002), available at <<http://www.aanp.org/NR/rdonlyres/endrij7vquyvfoiqes72iehws44trvz43ualmwdmkmn6qrnidad62mapicxl5zcortuqv2pgxohzte/Position%2bStatement%2bPrescriptive%2bAuthority.pdf>>.
70. Carson, *supra* note 37.
71. A Westlaw search of the ALLSTATES and ALLFEDS databases was conducted by the Alabama State Supreme Court Library research attorney on January 11, 2002, using the following: Nurse =2 Practitioner/P Prescript! "Pain Management".
72. Ala. Code § 34-21-86 (a)(1–2) (2002).
73. Personal communication from Alabama Board of Nursing and Alabama Board of Medical Examiners investigative staff regarding a case under investigation (November 2002).
74. "We met with about 15 CRNP educators. They wanted the Board to do something about third party payment. They wanted to talk about barriers to practice but they did not have a core curriculum...." Comment made by N.G. Lee, executive officer of the Alabama Board of Nursing, in her March 21, 2001 report to the board at its March 21–23, 2001 meeting.
75. Sherwood et al., *supra* note 32.
76. National Advisory Council on Nurse Education and Practice, *supra* note 46, at 23.
77. C.J. Dickson and J.B. Mann, *Nurse Practitioners in Alabama, A Synthesis of Perceptions of Role and Regulatory Accountability*, Concurrent Educational/Research Sessions, (Chicago: National Council of State Boards of Nursing, 1995): at 163–203.
78. J.B. Lazarus and N.G. Lee, *Alabama Board of Nursing*

Initial Report Findings of the RN Workforce 2000 (Montgomery: Alabama Board of Nursing, 2000), report presented at the *Alabama Board of Nursing Regulatory Invitational Summit*, Prattville, Alabama, October 19, 2001.

79. Spratley et al., *supra* note 14.

80. This information was obtained from an Alabama Board of Nursing survey conducted in October 2001 of those educational programs offering master's degrees with specialties for family nurse practitioners, adult nursing practitioners, and acute care practitioners. While eight educational institutions offer master's degrees with nurse practitioner tracks, only six offer the specialties described. Due to assurances of confidentiality, neither the programs nor their respondents are named.

81. While the curriculum plans stated that there were clinical experiences in prescriptive practice, individual respondents, in their qualitative responses, commented that their clinical experience was conducted under preceptors and not instructors. Some indicated that their courses were taught online rather than in the classroom or a clinic.

82. Several of the nurse practitioners indicated they were not in collaborative practice at the time of the survey. Reasons were not given; however, when nurse practitioners seek a new collaborative practice, application for approval must again be requested from the Board of Nursing. The request must again be processed through the Joint Committee.

83. This is technically correct. The Alabama Administrative Code, r. 610-X-9, specifies collaborative practice parameters for physicians and nurses.

84. Hoffmann, *supra* note 10.

85. E-mail survey, Alabama Board of Nursing (December 18, 2001).

86. Information provided by Cyndy Haynes, director of education and practice, West Virginia Board of Examiners for Registered Professional Nurses (January 22, 2002).

87. *Interview Guide for Investigators* (November 2002):

What is needed to improve the investigative process of the Alabama Board of Nursing when collaborative practice is required for prescriptive practices relative to pain management?

1. How many incidents or complaints have you investigated that involve any aspect of prescriptive practice of CRNPs?
2. What does the investigative process involve? (steps, methods)
3. What outcome must be produced in the investigative process?
4. What was the nature of the complaints?
5. Do you perceive that the Board of Nursing is adequately monitoring prescriptive practice in pain management?
6. Why or why not?

7. Did any problems arise specific to the investigations as related to collaborative practice?

- Non-specific protocols
- Practicing beyond the scope of practice
- Both physician and nurse were noncompliant
- Physician's privileges for prescribing controlled substances, asking CRNP to exceed protocols
- Physician is uncooperative on investigation
- Not reporting of noncompliance
- Patient came to harm, no cooperation from agency, physician or nurse in providing data
- Unavailability of records
- Inadequate records
- Other

8. What barriers have you encountered in conducting investigations involving collaborative practice for prescriptive practice in pain management?

9. Are we as a regulatory agency addressing the magnitude of violations of legally authorized prescriptive practice of controlled substances in collaborative practice?

10. Would, in your opinion, having a quality management system in place help capture violations?

11. How would you, as an investigator, perceive your role in implementing a QM [quality management] system?

12. Is a formal continuous monitoring process needed for case detection?

13. What components and methods are needed to institute such a process?

14. Do you believe that extending prescriptive practice for controlled substances to CRNPs will compound problems of regulation for public safety and welfare?

15. If you could design a plan for effective monitoring of prescriptive practice in collaborative practice, what would you include?

88. "Alternative disciplinary participants" are nurses enrolled in an alternative disciplinary program who have voluntarily acknowledged substance abuse or a physical or mental condition rendering them unable to meet the standards of the nursing profession, and are monitored without their licenses being placed on probation or revoked subsequent to § 34-21-25(j) of the Alabama Code (2002).

89. The interview with the Board of Medical Examiners investigators was conducted on January 16, 2002.

90. The guidelines being referenced are the "Guidelines for the Use of Controlled Substances for the Treatment of Pain," Ala. Admin. Code r. 540-X-4-.08 (2002). The investigator who made this comment specifically monitors for compliance with the protocols and uses a standard questionnaire.